

CLAIMS

We claim:

1. A fastening device for two component members comprising:

a first component member including at least two protruded portions each having a predetermined lead angle; and

a second component member including at least two protruded portions, at least one of the protruded portions of said second component member having a different lead angle from the lead angle of the protruded portions of said first component member,

wherein when said first and second component members are moved closer from a first relative position to a second relative position, said protruded portions are engaged with each other, and said first and second component members are fixed in the second position by frictional engagement of the protruded portions differing in said lead angle.

2. The fastening device for two component members according to claim 1, wherein said first and second component members are formed of an elastic material so that when said protruded portions of said first component member are engaged with the protruded

portions of said second component member in the second position, said protruded portions are elastically deformed by each other.

3. The fastening device for two component members according to claim 1, wherein said first and second component members are a cylindrical container having an open end portion and a lid for said open end portion, and said protruded portions are threads of a male screw formed on an outer peripheral wall of said open end portion of said container and threads of a female screw formed on an inner peripheral wall of said lid.

4. The fastening device for two component members according to claim 2, wherein said first and second component members are a cylindrical container having an open end portion and a lid for said open end portion, and said protruded portions are threads of a male screw formed on an outer peripheral wall of said open end portion of said container and threads of a female screw formed on an inner peripheral wall of said lid.

5. The fastening device for two component members according to claim 3, wherein each of said first and second component members includes an even

number of threads, and said protruded portions having a different lead angle are provided alternately on one of said component members.

6. The fastening device for two component members according to claim 4, wherein each of said first and second component members includes an even number of threads, and said protruded portions having a different lead angle are provided alternately on one of said component members.

7. The fastening device for two component members according to claim 3, wherein when the threads on the inner wall of said lid are engaged with the threads formed at the open end portion of said cylindrical container, the inner ceiling surface of said lid is brought into contact with the surface of said open end portion of the container defining the opening.

8. The fastening device for two component members according to claim 4, wherein when the threads on the inner wall of said lid are engaged with the threads formed at the open end portion of said cylindrical container, the inner ceiling surface of said lid is brought into contact with the surface of

said open end portion of the container defining the opening.

9. The fastening device for two component members according to claim 5, wherein when the threads on the inner wall of said lid are engaged with the threads formed at the open end portion of said cylindrical container, the inner ceiling surface of said lid is brought into contact with the surface of said open end portion of the container defining the opening.

10. The fastening device for two component members according to claim 6, wherein when the threads on the inner wall of said lid are engaged with the threads formed at the open end portion of said cylindrical container, the inner ceiling surface of said lid is brought into contact with the surface of said open end portion of the container defining the opening.

11. The fastening device for two component members according to claim 1, wherein the difference between the lead angle of the protruded portions of said first component member and the different lead angle of the at least one of the protruded portions of

said second component member is from about 1° to about 2° .

12. The fastening device for two component members according to claim 1, wherein the difference between the lead angle of the protruded portions of said first component member and the different lead angle of the at least one of the protruded portions of said second component member is at least about 1° .

13. The fastening device for two component members according to claim 1, wherein the difference between the lead angle of the protruded portions of said first component member and the different lead angle of the at least one of the protruded portions of said second component member is less than about 2° .

14. The fastening device for two component members according to claim 1, wherein the difference between the lead angle of the protruded portions of said first component member and the different lead angle of the at least one of the protruded portions of said second component member is about 1.5° .

15. The fastening device for two component members according to claim 1, wherein the predetermined lead angle of the at least two protruded portions of

said first component member is from about 10° to about 30° .

16. The fastening device for two component members according to claim 1, wherein the predetermined lead angle of the at least two protruded portions of said first component member is at least about 10° .

17. The fastening device for two component members according to claim 1, wherein the predetermined lead angle of the at least two protruded portions of said first component member is less than about 30° .

18. The fastening device for two component members according to claim 1, wherein the different lead angle of the at least one of the protruded portions of said second component member is from about 10° to about 30° .

19. The fastening device for two component members according to claim 1, wherein the different lead angle of the at least one of the protruded portions of said second component member is at least about 10° .

20. The fastening device for two component members according to claim 1, wherein the different lead angle of the at least one of the protruded

portions of said second component member is less than about 30°.

21. A method for fastening a first component member and a second component member, said first component member including at least one protruded portion having a predetermined lead angle and said second component member including at least one protruded portion having a different lead angle from the lead angle of the protruded portion of said first component member, the fastening method comprising the steps of:

moving said first and second component members to a first relative position where said protruded portions of the component members are engaged with each other; and

moving said first and second component members from the first relative position to a second relative position so that said protruded portions are elastically deformed as a result of their engagement with each other,

whereby said first and second component members are fastened to each other by the frictional engagement of said protruded portions.